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CRAWFORD MAUNU PLLC
1270 NORTHLAND DRIVE, SUITE 390
ST. PAUL, MN 55120

EXAMINER	
AZAD, ABUL K	

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/392,124
Filing Date: September 08, 1999
Appellant(s): CHRISSAN ET AL.

Robert J. Crawford
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed December 1, 2005 appealing from the Office action mailed November 7, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is deficient. 37 CFR 41.37(c)(1)(v) requires the summary of claimed subject matter to include: (1) a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number, and to the drawing, if any, by reference characters and (2) for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters. The brief is deficient because the appellant statement, "the invention provides significant improvement on the multi-pulse speech analysis and synthesis teachings of the Bialik reference. . . over the '588 reference by performing a more accurate MPA analysis" is not true in view of examiner's rejection. Appellant suppose to present his augments or comparison of the prior art at the Argument section of the Brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,568,588	Bialik et al.	10-1996
5,754,976	Adoul et al.	05-1998

Sklar, Bernard; "Digital Communications Fundamentals and Applications" Prentice Hall, 1998, Pages 60-65.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-27 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bialik (US 5,568,588) in view of Adoul et al. (US 5,754,976). The rejection is set forth in the prior final Office action (mailed on April 7, 2004) and reproduce for convenience.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bialik et al. (US 5,568,588) in view of Adoul et al. (US 5,754,976) as applied to claim 25 above, and further in view of Sklar (Digital Communications Fundamentals and Application). The rejection is set forth in the prior final Office action (mailed on April 7, 2004) and reproduce for convenience

As per claim 1, Bialik teaches, "in a speech processing system including a signal processor arrangement that analyzes an input speech signal and, in response, generates the short-term characteristics of the input speech signal and a target vector" (Fig. 1, elements 10 and 28), a method of analyzing the input speech signal comprising:

"generating from the target vector and the short term characteristics, a plurality of variable-amplitude pulses" (Fig. 1, element 10 a short term prediction analyzer, element 13 target vector generator, element 20 pulse location determiner and element 38 pulse which matches target vector; col. 4, lines 12-51, particularly reads on, "typically has a value of 3 separate gain levels . . . the gain level selector 24 receives the gain range produced by gain range determiner22 and move through the gain values within the gain range", form this statement it is clear that for each gain level the system will obtained a different amplitude of pulses; also teaches at col. 5, line 55 to col. 6, lines 27, particularly reads on "if the expected amplitude levels are in range of 0.1-2.0 units, the gain levels might be every 0.1 units"); and

"outputting a signal corresponding to a sequence of equal-amplitude pulses which, according to an error criterion, represents the target vector" (col. 6, lines 35-47, particularly reads on in step 76, target vector matcher 28 determines the value of global criterion GC_j for each gain level j", where previously teaches at col. 4, lines 12-42, that each gain level produces equal-amplitude pulses).

Bialik does not explicitly teach, sequences of variable-amplitude pulses and each of the sequence having a different average amplitude value. However, Adoul teaches, "generating from the target vector and the short term characteristics, a

sequences of variable-amplitude pulses, each of the sequence having a different average amplitude value" (see "encoding principle", particularly reads on "non-zero pulses assigned to respective pulse positions p=1, 2, . . . L of the combination, where each non-zero amplitude pulse assumes at least one of q different possible amplitudes" at col. 12, lines 11-23). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use Adoul's teaching in the invention of Bialik because Adoul teaches a very good performance can be achieved with variable-amplitude pulses without paying a heavy price (col. 10, lines 7-18).

As per claim 2, Bialik teaches, "wherein the target vector is matched using a perceptual weighting criterion" (col. 6, lines 42-44, particularly reads on "for such a criterion, target vector matched 28 includes a perceptual weighting filter").

As per claim 3, Bialik teaches, "a speech processing system including a signal processor arrangement that analyzes an input speech signal and, in response, generates the short-term characteristics of the input speech signal and a target vector, comprising:"

"means for generating from the target vector and the short term characteristics, a plurality of variable-amplitude pulses" (Fig. 1, element 10 a short term prediction analyzer, element 13 target vector generator, element 20 pulse location determiner and element 38 pulse sequence which matches target vector; col. 4, lines 12-51, particularly reads on, "typically has a value of 3 separate gain levels . . . the gain level selector 24 receives the gain range produced by gain range determiner22 and move through the gain values within the gain range. It output, on output line 32", form this statement it is

clear that for each gain level the system will obtained a different amplitude of pulses; also teaches at col. 5, line 55 to col. 6, lines 27, particularly reads on "if the expected amplitude levels are in range of 0.1-2.0 units, the gain levels might be every 0.1 units"); and

"means for outputting a signal corresponding to a sequence of equal-amplitude pulses which, according to an error criterion, represents the target vector" (col. 6, lines 35-44, particularly reads on in step 76, target vector matcher 28 determines the value of global criterion GC_j for each gain level j", where previously teaches at col. 4, lines 12-42, that each gain level produces equal-amplitude pulses).

Bialik does not explicitly teach, sequences of variable-amplitude pulses and each of the sequence having a different average amplitude value. However, Adoul teaches, "generating from the target vector and the short term characteristics, a sequences of variable-amplitude pulses, each of the sequence having a different average amplitude value" (see "encoding principle", particularly reads on "non-zero pulses assigned to respective pulse positions p=1, 2, . . . L of the combination, where each non-zero amplitude pulse assumes at least one of q different possible amplitudes" at col. 12, lines 11-23). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use Adoul's teaching in the invention of Bialik because Adoul teaches a very good performance can be achieved with variable-amplitude pulses without paying a heavy price (col. 10, lines 7-18).

As per claim 4, Bialik teaches, "wherein the target vector is matched using a perceptual weighting criterion" (col. 6, lines 42-44, particularly reads on "for such a criterion, target vector matched 28 includes a perceptual weighting filter").

As per claim 5, Bialik teaches, "a speech processing system including a signal processor arrangement that analyzes an input speech signal and, in response, generates the short-term characteristics of the input speech signal and a target vector, comprising:"

"an analyzer adapted to receive the target vector and the short term characteristics and to generate a plurality of variable-amplitude pulses" (Fig. 1, element 10 a short term prediction analyzer, element 13 target vector generator, element 20 pulse location determiner and element 38 pulse sequence which matches target vector; col. 4, lines 12-51, particularly reads on, "typically has a value of 3 separate gain levels . . . the gain level selector 24 receives the gain range produced by gain range determiner22 and move through the gain values within the gain range. It output, on output line 32", form this statement it is clear that for each gain level the system will obtained a different amplitude of pulses; also teaches at col. 5, line 55 to col. 6, lines 27, particularly reads on "if the expected amplitude levels are in range of 0.1-2.0 units, the gain levels might be every 0.1 units");

"the analyzer being further adapted to output a signal corresponding to a sequence of equal-amplitude pulses which, according to an error criterion, represents the target vector" (col. 6, lines 38-42, particularly reads on in step 76, target vector matcher 28 determines the value of global criterion GC_j for each gain level j", where

previously teaches at col. 4, lines 12-42, that each gain level produces equal-amplitude pulses).

Bialik does not explicitly teach, sequences of variable-amplitude pulses and each of the sequence having a different average amplitude value. However, Adoul teaches, "generating from the target vector and the short term characteristics, a sequences of variable-amplitude pulses, each of the sequence having a different average amplitude value" (see "encoding principle", particularly reads on "non-zero pulses assigned to respective pulse positions p=1, 2, . . . L of the combination, where each non-zero amplitude pulse assumes at least one of q different possible amplitudes" at col. 12, lines 11-23). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use Adoul's teaching in the invention of Bialik because Adoul teaches a very good performance can be achieved with variable-amplitude pulses without paying a heavy price (col. 10, lines 7-18).

As per claim 6, Bialik teaches, "wherein the target vector is matched using a perceptual weighting criterion" (col. 6, lines 42-44, particularly reads on "for such a criterion, target vector matched 28 includes a perceptual weighting filter").

As per claim 7, Bialik teaches, "a speech processing system including a signal processor arrangement that analyzes an input speech signal and, in response, generates the short-term characteristics of the input speech signal and a target vector, comprising:"

"a multi-pulse analyzer adapted to receive the target vector and the short term characteristics and to generate a plurality of variable-amplitude, variable-sign and

variably-spaced pulses, each of said pulses having variable amplitudes and variable signs" (Fig. 1, element 10 a short term prediction analyzer, element 13 target vector generator, element 20 pulse location determiner and element 38 pulse sequence which matches target vector; col. 4, lines 12-51, particularly reads on, "typically has a value of 3 separate gain levels . . . the gain level selector 24 receives the gain range produced by gain range determiner22 and move through the gain values within the gain range. It output, on output line 32", form this statement it is clear that for each gain level the system will obtained a different amplitude of pulses, so for out put of multiple gain levels of pulses will obtain a sequence of variable-amplitude; also teaches at col. 5, line 55 to col. 6, lines 27, particularly reads on "if the expected amplitude levels are in range of 0.1-2.0 units, the gain levels might be every 0.1 units"; also Bialik teaches, "the pulse sequence is series of positive and negative pulse sequence having the current gain");

"the multi-pulse analyzer being further adapted to output a signal corresponding to a sequence of equal-amplitude, variable-sign, variably-spaced pulses which, according to a maximum likelihood criterion, most closely represents the target vector" (col. 6, lines 35-44, particularly reads on in step 76, target vector matcher 28 determines the value of global criterion GC_j for each gain level j", where previously teaches at col. 4, lines 12-42, that each gain level produces equal-amplitude pulses and variable-sign and variably-spaced pulses).

Bialik does not explicitly teach, sequences of variable-amplitude pulses and each of the sequence having a different average amplitude value. However, Adoul teaches, "generating from the target vector and the short term characteristics, a sequences of

variable-amplitude pulses, each of the sequence having a different average amplitude value" (see "encoding principle", particularly reads on "non-zero pulses assigned to respective pulse positions p=1, 2, . . . L of the combination, where each non-zero amplitude pulse assumes at least one of q different possible amplitudes" at col. 12, lines 11-23). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use Adoul's teaching in the invention of Bialik because Adoul teaches a very good performance can be achieved with variable-amplitude pulses without paying a heavy price (col. 10, lines 7-18).

As per claim 8, Bialik teaches, " wherein the target vector is matched using a perceptual weighting criterion" (col. 6, line 42-44, particularly reads on "for such a criterion, target vector matched 28 includes a perceptual weighting filter").

As per claim 9, Bialik teaches, "wherein the pulse amplitude variations are based on at least one of the exponential function; a linear function; the short-term characteristics of the input speech signal; the long-term characteristics of the input speech signal; and the excitation signal from previous frames" (Fig. 5, elements 10, 12, and col. 5, lines 1-15, impulse response is a function of short-term characteristics a1 provided along line 17 from analyzer 10").

As per claims 10-27, they are interpreted, thus rejected for the same reasons set forth in the rejection of claims 1-9.

As per claim 29, Bialik teaches, "wherein the pulse-train sequence modification function is based on a linear function" (col. 4, line 55 to col. 5, line 65, equation 2 is a linear function).

As per claim 30, Bialik teaches, "wherein the pulse-train sequence modification function is based on the short-term characteristics of the input speech signal" (col. 4, lines 55-65, short-term characteristic).

As per claim 31, Bialik teaches, "wherein the pulse-train sequence modification is based on the long-term characteristics of the input speech signal" (col. 3, lines 41-48, long-term analyzer).

As per claim 32, Bialik teaches, "wherein the pulse-train sequence modification function is based on the excitation signal from previous frames" (col. 6, lines 11-18, reads on "in step 62, determiner 25 updates the local criterion with the previous pulse as follows equation 7").

As per claim 28, Bialik in view of Adoul do not explicitly teach modifying the pulse train based on the exponential function. However, Sklar teaches, in the speech signal processing to use pulse trains constructed based on the exponential function (Page 63, equations 2.10 and 2.11). It would have been obvious to one of ordinary skill in the art at the time of the invention to use pulse-train sequence modification function is based on the exponential function because output speech quality is greatly increased, and perceptually smooth.

(10) Response to Argument

The appellant argues at Pages 5 of the brief, "The Examiner's Section 103(a) rejections fail to present a *prima facie* case of obviousness because Appellant's claims cannot be read to cover the '588 reference, with or without the Examiner's proposed modifications in view of the '976 *Adoul* reference. With reference to Fig. 1 of the '588 reference, the Examiner alleges that the claim (e.g., claim 1) limitations "generating from the target vector and the short term characteristics, a plurality of sequences of variable-amplitude pulses," reads on the '588 reference's elements 10, 13, 20 and 38. Perhaps in view of the clear teaching in each of the '588 embodiments and the '588 claims (see also equal-amplitude pulses in Figs. 3A, 3B, 4A and 4B), the Examiner has correctly admitted that none of these cited elements (or any other aspects of the '588 reference) teach "sequences of variable-amplitude pulses" (see Final Office Action, page 3, last paragraph)".

Examiner's response: In response to appellant's above arguments the examiner notes that in the summery section the appellant relates the claimed invention with the specification and Figures as "generates the short term characteristics of the input speech signal and a target vector to Fig. 1, items 22 and 24, corresponds to specification page 6, line 6 to page 9, line 27, specifically page 7, line 22 to page 8, line 11 and the pulse sequence is reconstructed using varying amplitude pulses in the sequence at Figure 2, block 53, corresponds to specification page 10, lines 18-24 (See section V. summary of the invention in the brief)". Bialik teaches at Figure 1, item 22 as

gain range determiner (details of gain range determiner at col. 5, lines 30-54) and at col. 5, line 55-col. 6, line 27, particularly reads on "in step 56, the gain selector 24, stores the first pulse position and its amplitude". Bialik also teaches at col. 5, line 41 to col. 6, line 27, how gain range is determined and from a pulse location or pulse position a sequences of different pulse amplitude values are determined. The appellant misinterpreted Bialik's Figs. 3A and 3B to show equal amplitude pulse. In reality Bialik's Fig. 3, an example of element 25 pulse sequence determiner have gain index of 7 and 8, both sequences have the same first sample position but rest of the pulses are at other positions. Bialik uses this example to select a position and its amplitude, similar way he select other position and their amplitude of the pulses in the sequence determiner (See details in col. 5, line 55 to col. 6, line 27; steps 54-58 and steps 64-70). Appellant describe in his specification a pulse sequence is provided at signal line 32, is a current gain level for which a sequence of pulses is to be determined but did not describe how many gain level is used (Page 8, lines 10-11). Appellant stated at specification, page 8, lines 3-5, "the range of gains searched, the pulse gain and pulse location of the current pulse sequence are output to the pulse amplitude selector"; and also at page 10, lines 17-20, "the pulse location determination operation at block 53 uses pulses of varying amplitude within a given pulse sequence". Bialik has equivalent teaching at Fig. 1, element 22 "gain range determiner" range of 0.1-2.0 units (see page 5, line 52, will produce amplitude (see col. 6, line 4) steps 64-70 will updates pulses amplitudes for different pulse positions of the pulse sequence selector. The examiner

does not see any improvement over Bialik reference beside using language "varying amplitude".

The prior art element performs the identical function specified in the claim in substantially the same way, and produces substantially the same results as the corresponding element disclosed in the specification. *See Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 54 USPQ2d 1308 (Fed. Cir. 2000)

The prior art element is a structural equivalent of the corresponding element disclosed in the specification. *See In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). *See In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

The appellant's statement, "the examiner has correctly admitted that non of those cited elements teach "sequences of variable-amplitude pulses" is not correct because the examiner's statement was "do not explicitly teach" the wording "sequences of variable-amplitude pulses". Here, Adoul teaches that explicitly. However, Bialik reference implicitly teaches "sequences of variable-amplitude pulses" (see col. 5, line 40 to col. 6, line 27).

The appellant further asserts at page 5, of the brief, "In a hindsight attempt to overcome this deficiency, the Examiner has proposed modifying these cited elements of the '588 reference in view of the alleged teaching of codevector-waveform pulse positions from the '976 reference. Failing to support the rejection, the Examiner has not, however, explained how this could be accomplished. Moreover, deduction would suggest that this proposed modification is somehow achieved without modifying

elements 10 or 13. This logic follows since elements 10 and 13 of the '588 reference provide the short-term characteristics (from element 10) and the target vector (from element 13) from which 'a plurality of sequences of variable-amplitude pulses" are to be generated. Further, element 20 is described by the '588 reference as merely to "determine the sample location of a first pulse in accordance with (known MPA) multi-pulse analysis techniques" ('588 reference, col. 4, lines 10-1 1); as such, it seems untenable that the Examiner would be suggesting that the skilled artisan would be led to change element 20 so that, instead of determining the sample locations of the pulses, it would be modified to generate "sequences of variable-amplitude pulses." Accordingly, the Examiner's proposed modification would have to be achieved by modifying element 38 with the alleged '976 teachings of codevector-waveform pulse positions".

Examiner's response: In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

There is no need to modification the Bialik reference's elements 10, 13, because appellant has same structure have performed same function. Bialik describe "gain

selector 24 stores the first pulse position and its amplitude (col. 6, line 4), as they are also in appellant's element 24, copied from Bialik with a changed label with out changing the function. Here, Adoul is used only to prove "sequences of variable-amplitude pulses" is obvious to one of ordinary skill in art. Bialik teaches in element 25 a pulse sequence determiner, Bialik also teaches at col. 6, lines 1-27, how the pulse amplitude is updated for the particular location within the selected gain range. However, Bialik does not explicitly teach, "sequence of variable-amplitude pulse is generated". Here, Adul solve this particular problem. Adoul explicitly teaches, "sequence of variable-amplitude pulse is generated" (see col. 12, lines 15-23). Bialik's element 28 and Appellant's element 28 produces equal output of element 38, "a signal corresponding to a sequence of equal-amplitude pulses which according to an error criterion, representing the target vector" (see independent claims of Appellant).

Yes, element 28 was intended for examiner's mentioned "element 38" as applicant assumes at page 5, of the brief.

The Appellant contradicting himself by stating at page 6, of the brief, "this proposed modification could not result, even with lengthy research and explanations, in "target vector matcher 28" operating to generate "sequences of variable-amplitude pulse"". It is unclear from the Appellant's Fig. 1 and specification pages 8-10, whether "vector matcher 28" operating to generate "sequence of variable-amplitude pulse" or not because Appellant deleting lots of details from the Bialik's invention (from where he copied) without adding any new features. However, it is sure from the Appellant's independent claims that "vector matcher 28" operate to generate "sequence of equal-

amplitude pulses" at line 38 of Fig. 1 (see at least claim 1). The examiner's thought that both Bialik and appellant generate and store amplitude at element 24 and "vector matcher 28" operate to output at line 38 "sequence of equal-amplitude pulse".

The appellant further argues at pages 6 and 7, "the103(a) Rationale Would Combine Competing And Incompatible Systems. The Examiner's rejections are based on the MPA type of speech coding approach (as exemplified by the '588 reference) but as somehow modified by certain aspects relating to the codevector-waveform pulse positions taught by the '976 reference".

Examiner's response: In response to applicant's argument at pages 6 and 7, that Adoul is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, both Adoul and Bialik are in same field of invention directed to speech coding using LPC and STP and LTP searching the codebook to fiend the pulse amplitudes for different pulse positions and Adoul solving a particular problem of "each non-zero amplitude pulse assumes at least one of q different possible amplitudes" (col. 10, line 22 to col. 12, line 33, particularly col. 12, lines 20-23). Discussing about CELP is irrelevant because at the examiner pointed section,

"encoding principal" of Adoul showing LPC coding as appellant's invention and Bialik's invention used.

In response to appellant's argument that '588 reference does not have any such code book to search and the examiner failed to prove how a traditional codebooks would be utilized by the '588 method in the proposed combination, the examiner notes that "target vector matcher 28" is a codebook, where set of code vectors are stored, which need to search in order to match a target vector. Definition of a coodbook is " set of code vectors comprises a codebook for the feature space" (See text book of Deller, Page 72). Searching is defined by Deller is "matching" (Page 430).

The Appellant again argues at page 8 of the brief, "the 103 (a) rejection of claim 1-27 and 29-32 is not proper when the Examiner's propose modification of the '588 reference would frustrate the purpose and operation of the '588 reference". To prove this statement the applicant has presented his position at pages 8 and 9.

Examiner's response: The examiner disagrees with appellant's above assertion because they are not frustrate the purpose of operation of the '588 reference because both '588 and appellant's inventions are equivalent structurally, will produce equal result.

In response to The Appellant's assertion about Bialik's at page 8 of the brief, claims 2 and 12 "a sequence of equal amplitudes" and claim 10, "variable sign trains of

equal amplitude", the examiner notes that the Appellant has claimed the similar limitations.

As per claim 1, Appellant has claimed: "in a speech processing system including a signal processor arrangement that analyzes an input speech signal and, in response, generates the short-term characteristics of the input speech signal and a target vector" (Bialk, claim 2, preamble), a method of analyzing the input speech signal comprising:

"generating from the target vector and the short term characteristics, a plurality of variable-amplitude pulses, each of the sequences having a different average amplitude value" (Bialk, claim 2, col. 9, lines 1-13, particularly reads on "an amplitude range determiner for determining both an amplitude of said initial pulse and a range of quantized amplitude levels grouped around the absolute value of said selected quantized amplitude"); and

"outputting a signal corresponding to a sequence of equal-amplitude pulses which, according to an error criterion, represents the target vector" (Bialk, claim 2, col. 9, lines 14-21).

Similarly Appellant's other independent claims could map with Bialik's claims 2, 10 and 12.

The examiner's opinion is both Appellant and Bialik claimed to generate sequence of variable-amplitude pulses each of the sequence having a different average amplitude value and from that outputting a signal corresponding to equal-amplitude pulses by matching target vector.

Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or non-preferred embodiments. *See In re Susi*, 440 F.2d 442,169 USPQ 423 (CCPA 1971). "A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." *See In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, suggestion, or motivation are found in the references, here Adoul teaches a very good performance can be achieved with variable-amplitude pulses without paying a heavy price (col. 10, lines 7-18).

The Appellant further argues at page 9, in the brief "the 103 (a) rejection of claim 28, is not proper when the examiner fails to present a prima facie rejection by failing to present a combination of references that corresponds to the claimed invention and failing to present evidence of motivation for the modification proposed by the examiner".

Examiner's response: In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, suggestion of motivation is found the knowledge generally available is "output speech quality is greatly increased, and perceptually smooth", because it is known that speech is periodic signal.

In response to applicant's argument that undermine and objectives of the '588 reference, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In view of above response, the examiner has met his burden with regards to the first criterion in order to establish a case of *prima facie* obviousness.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Abul K. Azad

ABUL AZAD
PRIMARY EXAMINER

Conferees:

Richemond Dorvil

RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER

Tālivaldis I. Šmits

TĀLIVALDIS IVARS ŠMITS
PRIMARY EXAMINER